

Code No: 07A50502

R07**Set No. 2**

**III B.Tech I Semester Examinations, May 2011
SOFTWARE TESTING METHODOLOGIES**

Common to Information Technology, Computer Science And Engineering

Time: 3 hours

Max Marks: 80

**Answer any FIVE Questions
All Questions carry equal marks**

1. Explain the following in the context of node reduction procedure:
 - (a) Cross term step
 - (b) Parallel term step
 - (c) Loop term step. [16]
2. (a) Define Transaction & Transaction flow Testing.
 (b) Why Transactional flows are a natural agenda for system reviews?
 (c) Explain the procedure used in Transactional flow testing? [4+4+8]
3. (a) Explain the process of achieving (C_1+C_2) coverage.
 (b) How do you convert a flow-chart into a flow graph. [8+8]
4. (a) What are the principles of state testing? Explain its advantages and disadvantages.
 (b) What is finite state machine and a state? [8+8]
5. (a) Define Software bug.
 (b) Define Pesticide Paradox and Complexity barrier.
 (c) Explain different phases of tester's mental life. [2+6+8]
6. What is a decision table and how does it is useful in testing. Explain it with help of an example. [16]
7. (a) Write an algorithm for Node Reduction (General).
 (b) Illustrate the applications of Node Reduction algorithm. [8+8]
8. (a) Explain the acronym Closed Off Outside, Open Off Inside (COOOOI) in domain testing.
 (b) Explain Span-Compatibility in domains and Interface testing. [8+8]

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1. (a) What are the Restrictions in domain testing?
(b) What are the possible domain bugs for a one-dimensional closed boundary? [8+8]
2. (a) Differentiate between good state graphs and bad state graphs.
(b) What are principles of state testing? Explain its advantages and disadvantages. [8+8]
3. (a) Explain the two goals of Testing?
(b) What are the methods which prevent bugs, other than the Testing?
(c) Why complete testing is impossible? [4+8+4]
4. Minimize the function using Karnaugh Map method
 $F(A,B,C,D) = \Sigma (1,2,3,8,9,10,11,14) + \Sigma d(7,15)$ [16]
5. (a) Explain GUI MAP file
(b) Explain about Usage of WinRunner and JMeter Tools for Functional / Regression Testing. [8+8]
6. (a) What are the different kinds of loops.
(b) Explain the procedure used in testing loops in path testing. [4+12]
7. (a) How can the looping probability of a path expression can be calculated.
(b) The Looping Probability of a loop node is P_L and that of non-looping node is $P_A = 1 - P_L$ by considering the following example as shown in figure 1. [8+8]
8. (a) Explain the procedure to construct a Data Flow Graph.
(b) Construct the Data flow graph for the following problem.
 - i. Given L, t, and d, solve for Z .
 - ii. $\cos(C) = \cos(L) \sin(t)$
 - iii. $\tan(M) = \cot(L) \cos(t)$
 - iv. $\tan(Z+F) = -\sin(L) \tan(t)$
 - v. $\tan(F) = \cos(M) \tan(M+d)$. [8+8]

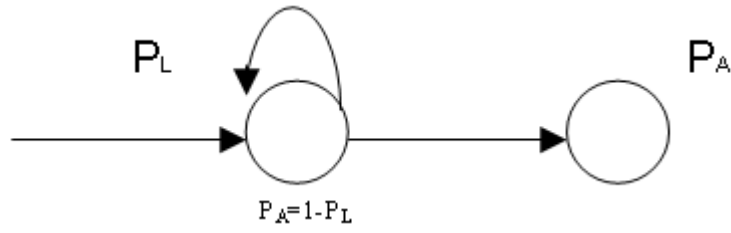


Figure 1

FIRSTRANKER

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1. (a) What are the advantages of matrix representations?
(b) Write about loops in matrix representation. [8+8]
2. (a) What are the different Requirement, Features and Functionality bugs?
(b) Write about different Structural bugs? [8+8]
3. (a) Explain the different two-dimensional Domain bugs.
(b) Explain different one-dimensional domain bugs. [8+8]
4. (a) Explain how the transaction flow-graph is used in functional testing.
(b) Explain Births and mergers in Transactions. [8+8]
5. Explain different good and bad state graphs with suitable examples. [16]
6. (a) Explain the difference between control flow graph and flow chart?
(b) Draw a flow graph for calculating the sum of n given numbers algorithm. [8+8]
7. (a) Explain the usage of regular expression in flow anomaly detection.
(b) Write about any two applications of regular expression. [8+8]
8. What is decision table and how does it is useful in testing. Explain it with help of an example. [16]

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R07**Set No. 3**

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1. (a) Explain state testing.
(b) Write the tester comments about state graph. [8+8]
2. (a) What are the different operators Used in Boolean Algebra and give tracts tables for them?
(b) State and Explain laws of Booleans Algebra. [8+8]
3. (a) Compare and contrast testing versus Debugging.
(b) Explain the purpose of Testing. [10+6]
4. (a) Explain different Ugly domains.
(b) How programmers and testers treat Ugly Domains. [8+8]
5. (a) Define path predicate expression and Coincidental correctness.
(b) Differentiate C1 coverage and C2 coverage in the factorial algorithm. [8+8]
6. (a) Define du path and definition-clear path segment.
(b) Why All-du-Paths (ADUP) is the strongest data-flow testing strategy? [6+10]
7. (a) Write a Partitioning Algorithm.
(b) Write an algorithm for All Pairs Paths using Matrix Operations? [8+8]
8. Using reduction procedure convert flow graph whose links are labeled into a path expression. Explain each step with flow graph as shown in figure 1. [16]

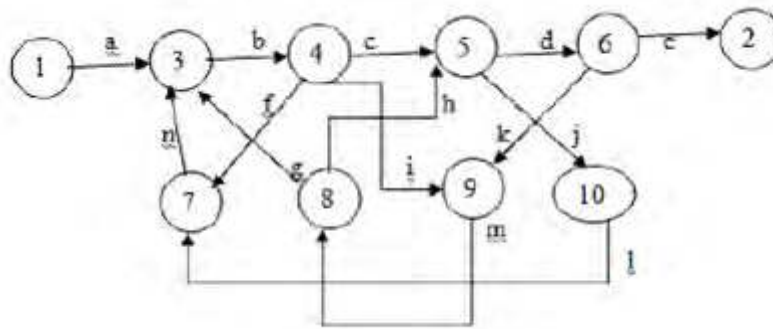


Figure 1:
